

IRIS Quality Principles for Data Collection, Distribution, and Use

The goal of the following IRIS Quality Principles is to address the whole process of collecting and distributing high-quality data, as this impacts the eventual quality and usability of the waveforms that are the end product. These quality principles are intended to be organization / operator neutral, and may be promulgated both nationally and internationally as a means of improving all data. Organizations that adhere to these principles provide a means of “quality assurance” to their data users. To achieve greatest impact, the mechanisms and tools used to implement these quality principles should be efficient, easy to operate, and scalable. Here, IRIS commits to adopting these principles, and indicates which part of the organization is primarily responsible for their implementation.

1. All users shall have information available to them that identifies the processes and methods by which the data were collected. (responsibility: Instrumentation Services (IS))
2. All users shall have information available to them that identifies the data quality assurance process utilized by the facility. (responsibility: IS, Data Services (DS))
3. There shall be mechanisms for operators to pass through to data users key information obtained as part of their data collection and quality assessment processes, including information that quantifies the integrity and state of the data time series and the validity and goodness of metadata and data time series. (responsibility: IS, DS)
4. All users of data shall have metrics describing data quality available to them, in a manner that allows use either directly by humans (e.g., web browser) or through computer interfaces (e.g., web services) where metrics can be directly included in workflows. (responsibility: DS)
5. The facility shall always strive to provide the most accurate metadata possible, and will update metadata when new information becomes available. (responsibility: IS, DS)
6. There shall be a mechanism for data users who register to report data quality information into the system. (responsibility: DS)
7. There shall be a mechanism for data users to obtain updates regarding data or metadata changes. (responsibility: DS)
8. IRIS-sponsored network / station operators shall have a quality plan, and implement quality processes that adhere to the larger facility-wide plan.¹ (responsibility: IS)

¹ The quality plan will at least include these sensor-specific requirements: Data providers shall maintain acceptance-testing protocols to verify instrument operational parameters prior to deployment; Regular in-situ calibrations will be conducted to validate key operational parameters.